

C² carried out easily and homogeneously. Further, a portion of impurities is removed from the molded body and the purity of the molded body also improves.--

IN THE CLAIMS:

Please replace claims 12, 14 and 18 as follows:

C³ 12. (Amended) A method for producing a silicon carbide sintered body, comprising:

- preparing a slurry by dispersing silicon carbide powder in a solvent;
- forming a molded body by pouring the slurry into a mold;
- impregnating the molded body with an organic substance comprising at least one kind of carbon source;
- effecting calcination of the slurry in a vacuum atmosphere or in an inert gas atmosphere; and
- sealing pores within the calcined molded body by impregnating the pores with high purity metal silicon molten by heating, and allowing the high purity metal silicon and carbon contained in the molded body to react on each other in the pores so as to produce silicon carbide.

C⁴ 14. (Amended) The method for producing a silicon carbide sintered body according to claim 12, wherein the silicon carbide powder is obtained by a process for preparing silicon carbide powder, which process comprises:

- producing silicon carbide powder by homogeneously mixing a silicon source comprising at least one selected from tetraalkoxysilane and polymers of tetraalkoxysilane, each of high purity, and a carbon source comprising an organic compound of high purity which generates carbon upon heating, and heating and firing the mixture in a non-oxidizing atmosphere; and
- effecting post-treatment in which the obtained silicon carbide powder is kept at a temperature from equal to or higher than 1,700°C to lower than 2,000°C and carrying out